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RANKIN, HILL, PORTER & CLARK LLP  
4080 ERIE STREET  
WILLOUGHBY, OH 44094-7836

EXAMINER

HANNAHER, CONSTANTINE

ART UNIT PAPER NUMBER

2884

DATE MAILED: 01/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/813,339

Applicant(s)

SATO ET AL.

Examiner

Constantine Hannaher

Art Unit

2884

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>20040802</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### **Information Disclosure Statement**

1. The information disclosure statement filed March 30, 2004 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

### **Drawings**

2. The drawings were received on June 21, 2004. These drawings are acceptable.

### **Specification**

3. The disclosure is objected to because of the following informalities: page 3, line 15, "2000" where --2002-- is meant.

Appropriate correction is required.

### **Claim Objections**

4. Claims 12, 20, 16, and 8 are objected to because of the following informalities: the phrase "materials whose part is the metal" is awkward. Appropriate correction is required.
5. Claim 11 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 11 is identical to claim 7 upon which it depends.

### **Claim Rejections - 35 USC § 102**

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Watanabe (US 20030010925A1).

With respect to independent claim 1, Watanabe discloses a radiological image pickup apparatus **200** (Fig. 3) comprising a radiation detection section **201** including an active matrix substrate **1**, a radiation-sensitive semiconductor **23**, and a voltage application electrode **25** (paragraph [0042]), all formed as recited (Fig. 6), the active matrix substrate including the recited elements (paragraph [0037]), and a cabinet **201a** for retaining the radiation detection section **201** therein, wherein at least a portion just above the voltage application electrode **25** is formed of a nonconductive material in a surface lid section of the cabinet opposed to the (paragraph [0046]) the voltage application electrode **25**.

With respect to dependent claim 2, the portions of cabinet **201a** other than the nonconductive material portion in the apparatus of Watanabe are formed of a conductive material (paragraph [0046]).

With respect to dependent claim 3, the surface lid section of the cabinet **201a** in the apparatus of Watanabe is entirely formed of a nonconductive material (paragraph [0046]).

With respect to dependent claim 4, the portions of cabinet **201a** other than the nonconductive material portion in the apparatus of Watanabe are formed of a conductive material (paragraph [0046]).

#### **Claim Rejections - 35 USC § 103**

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 9, 10, 12, 17, 18, 13, 14, 16, 5, 6, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe (US 20030010925A1) in view of Teranuma *et al.* (US006667481B2) and Kajiwara *et al.* (US006667480B2).

With respect to dependent claims 9, 17, 13, and 5, the radiological image pickup apparatus of Watanabe includes an air gap **201e** and spacers **201f** but no insulating substance or shield member. Teranuma *et al.* shows that in a radiological image pickup apparatus (Figs. **3A** and **3B**) comprising an active matrix substrate **1**, a radiation sensitive semiconductor **2**, and a voltage application electrode **3** (column 5, lines 55-60) it is known to entirely cover the radiation sensitive semiconductor and voltage application electrode with an insulating substance **22** (column 11, lines 43-45) and to form a shield member **21** made of a conductive material so as to cover the area from a margin of the common electrode **3** outwards (column 11, lines 53-55). In view of the reduced development of electric charge from x rays reaching the radiation sensitive semiconductor **2** outside the image detecting region **19** by the elements described by Teranuma *et al.*, it would have been obvious to one

of ordinary skill in the art at the time the invention was made to entirely cover the radiation sensitive semiconductor **23** and voltage application electrode **25** in the apparatus of Watanabe with an insulating material as suggested by Teranuma *et al.* and the cover any area of the insulating material other than that portion just above the voltage application electrode **25** with a shield member from a margin of voltage application electrode **25** outwards as suggested by Teranuma *et al.* Teranuma *et al.* depicts such extension at least beyond the insulating material (Fig. **3B**). However, in view of the known vulnerability of signal readout circuit **3** to radiation, as suggested by Kajiwara *et al.* (column 11, lines 37-43), it would have been obvious to one of ordinary skill in the art at the time the invention was made to extend the shield member suggested by Teranuma *et al.* to the side wall of the cabinet **201** in the apparatus of Watanabe so that signal readout circuit **3** and the like is shielded from radiation without the need for additional radiation shielding elements.

With respect to dependent claims 10, 18, 14, and 6, elements **55** in Kajiwara *et al.* (Fig. 8, column 10, lines 24-25) show an electrical connection between the shield member and an extension of the cabinet **14** formed of a conductive material. Since the shield member is insulated from the voltage application electrode by the suggestion of Teranuma *et al.*, it would have been obvious to one of ordinary skill in the art at the time the invention was made to electrically connect the shield member **21** suggested by Teranuma *et al.* to an extension of the cabinet **201** in the apparatus of Watanabe which is conductive (in view of the use of aluminum therefor, paragraph [0046]) in view of the grounding effect and further isolation of the patient effected thereby.

With respect to dependent claims 12, 16, and 8, the shield member **21** suggested by Teranuma *et al.* is formed of a material from the recited group (column 12, lines 7-10). The shield members **55** suggested by Kajiwara *et al.* are formed of a material from the recited group (column 10, lines 24-25, see also column 7, line 66 to column 8, line 2).

11. Claims 19, 20, 15, 7, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe (US 20030010925A1), Teranuma *et al.* (US006667481B2), and Kajiwara *et al.* (US006667480B2) as applied to claims 18, 14, and 6 above, and further in view of Hashimoto *et al.* (US006627896B1).

With respect to dependent claims 19, 15, 7, and 11, although Watanabe and Kajiwara *et al.* form various external electronics on substrates adjacent to the active matrix substrate, Hashimoto *et al.* shows that it is known in a radiological image pickup apparatus (Fig. 3) including an active matrix substrate 30 with a periphery shielded by a member 33 to form the scan circuits 1, 2, memory circuit 3, and output amplifier 4 on the same substrate (Fig. 2) and to form driver 34 on the same substrate 35 as the imager 30. In view of the reduced number of substrates, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Watanabe as modified by the suggestions of Teranuma *et al.* and Kajiwara *et al.* to form the charge detection amplifiers PA (Fig. 5) in the signal readout circuit 3 of Watanabe and the gate driver 2 of Watanabe connected to the ends of the signal lines SL and the scanning lines GL in the apparatus of Watanabe on the active matrix substrate 1 since the shielding suggested by Teranuma *et al.* and Kajiwara *et al.* reduces the need for mounting such elements behind a partition plate 201b and additional substrate 201c. The use of the insulating substrate suggested by Teranuma *et al.* to cover such elements formed on the active matrix substrate 1 would have been obvious in view of the desire to prevent short circuits from pressure applied to the casing and the like.

With respect to dependent claim 20, see the explanation of the rejection against claims 12, 16, and 8.

#### **Response to Submission(s)**

12. The amendment filed March 30, 2004 has been entered.

13. This application has been published as EP 1471368A1 on October 27, 2004 and again as US 2004/0211908A1 on October 28, 2004.

**Conclusion**

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Constantine Hannaher whose telephone number is (571) 272-2437. The examiner can normally be reached on Monday-Friday with flexible hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov/>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Constantine Hannaher  
Primary Examiner